

Armin Schöppach:  
US Patent Application No. 10/047,150  
(Z) 99038 P US

### Remarks

#### Information Disclosure Statement

An Information Disclosure Statement with legible copies, to replace those which were objected to previously, is being submitted under separate cover by first class mail, as the references are too voluminous to fax and this amendment is being faxed to the USPTO.

#### Claims Rejections under 35 USC 112

The claims have been amended to overcome the "112" rejections set forth on pages 2-4 of the Office Action. Specifically the feature that the density of the mounting is at most  $2.5 \times 10^3 \text{ kg/m}^3$  has been added to claim 4 (claim 1 has been deleted). In claim 8 line 2, "arranged in a region of" has been changed to "connected to" at least one of the optical elements. In claim 4, Applicant has followed the Examiner's suggestion to split the claim into a series of dependent claims (17-19).

#### Claim Rejections - 35 USC 103(a)

Claims 1, 3, 5-6, 8-9, 12 and 14 are rejected under 35 USC 103(a) as being unpatentable over the patent to Hull in view of Harnisch "Ultra-lightweight C/SiC Mirror and Structures." (Harnisch)

Claim 2 is rejected as being unpatentable over Hull in view of Harnisch and further in view Murakami.

Claims 13 and 16 are rejected as being unpatentable over Hull in view of Harnisch and further in view of Neil.

Claim 15 is rejected as being unpatentable over Hull in view of Harnisch and further in view of Atkinson.

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Claims 4 and 7 are rejected as being unpatentable over Harnisch in view of Hull and Neil.

Valid rejection under 35 USC 103(a) requires evidence of a suggestion or motivation for one skilled in the art to combine prior art references to produce the claimed invention. US Court of Appeals for the Federal Circuit (*Ecolchem inc. v Southern California Edison Co.*, Fed. Cir., No. 99/1043, 9/7/00).

The best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for showing a teaching or motivation to combine the prior art references, according to the court.

The cited prior art does not motivate or suggest to one skilled in the art to combine these references to produce Applicant's claimed invention.

Recently, in *In Re Sang-Su Lee* (00-1158) the Court of Appeals for the Federal Circuit rendered a decision confirming the above principles. The court analyzed 35 USC 103 requirements starting from the Administrative Procedure Act and held (citations omitted):

"Tribunals of the PTO are governed by the Administrative Procedure Act, and their rulings receive the same judicial deference as do tribunals of other administrative agencies.

"The Administrative Procedure Act, which governs the proceedings of administrative agencies and related judicial review, establishes a scheme of "reasoned decision making." Not only must an agency's decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.

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"As applied to the determination of patentability vel non when the issue is obviousness, it is fundamental that rejections under 35 USC §103 must be based on evidence comprehended by the language of that section. (Emphasis added). When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. (Emphasis added)

"The factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. There must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant. Teachings of references can be combined only if there is some suggestion or incentive to do so."

As stated above, the cited references do not motivate or suggest to a person skilled in the art to combine these references to duplicate the claims of the present invention.

To explain the difference between the present invention and the prior art, the mounting (115) does not comprise the compensation elements (119) because the mounting and the compensation elements are material with different thermal expansions coefficient.

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The mounting (115) does not comprise the compensation elements (119). The description paragraph [0021] does not differ from original claim 12. To make the present invention clearer we have amended the specification description and the claims.

Hull discloses a telescope with a thermal compensation. This thermal compensation comprises a number of heating elements, especially the mirrors, and the struts are actively heated. Thus, the thermal compensation is an active system, which has to be controlled, and which needs energy. Further, Hull discloses materials with different coefficients of thermal compensation. As an example, different kinds of aluminum are named. The different materials are used from manufacturing, producibility and cost standpoints. The expert cannot receive any hint to use different materials to realize a thermal compensation by taking different materials, because the system of Hull already has a thermal compensation, which is of totally different structure. Thus, Hull cannot provide any motivation or hint to create a thermal compensation in the way of Applicant's invention.

Further, claim 4 claims a special combination of materials for a mirror and compensation elements.

Thus, the present invention is patentable in respect of Hull.

Neil is directed to new cooled laser mirrors. Neil discloses SiN as material for mirrors. We have also mentioned Neil in the description of prior art, in the beginning of the present specification by which SiN mirrors are disclosed.

But Neil and the other prior art disclosing SiN mirrors do not disclose the special combination of materials claimed in claim 4.

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Therefore, the present invention is not obvious in respect of Neil, alone or in combination with Hull.

Harnisch discloses ultra light C/Csi mirrors and mirror-microstructures. In this paper, Harnisch does not disclose the special combination of materials as claimed in claim 4 of the present invention.

Thus, the present invention is patentable and not obvious in respect of Harnisch and Harnisch in combination with Hull and Neil.

The further named prior art do not disclose the claimed combination of materials that realize a thermal compensation. Thus, the present invention as claimed is distinguished from the prior art cited in the Office Action.

Wherefore, further consideration and allowance of the claims in this application is respectfully requested.

A one-month extension of time in which to respond to the outstanding Office Action is hereby requested. Credit Card Payment Form PTO-2038 is enclosed to cover the prescribed Large Entity one-month extension fee of \$110.00. Please charge any additional fees or credit any overpayments to Deposit Account 11-0665. A duplicate of this page is enclosed for this purpose.

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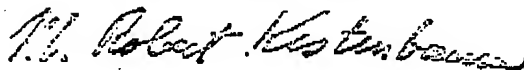
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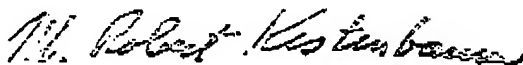
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Respectfully submitted,



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I hereby certify this correspondence is being submitted by facsimile transmission to  
Commissioner for Patents, Washington, D.C. 20231, fax number 703-872-9318 on June  
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